

Name: _____ TP: _____

Failure to show work on all problems or use complete sentences will result in a LaSalle.

For problem 1, you must GRASP it on a separate piece of graph paper.

1) Lupe tosses a ball up to Quyen with an initial velocity of 30 feet per second. She releases the ball from a height of 6 feet.

A. Write a vertical motion model to represent Lupe's toss.

B. If the ball must reach a height of 25 feet for Quyen to catch it in a third-story window, does the ball reach Quyen? Explain. Find MAX height

C. After how many seconds does the ball reach its maximum height? Find 'x' at MAX height

 D. How long is the ball in the air if Quyen catches it 6 feet above the ground? INTERSECTION at $y=6$

 2) What is the value of b in the expression below:

$$(x^{2b+8})^3 = x^{80}$$

- ① power to power
- ② set exponents = and solve.

 3) Simplify: $2^0 - 2^1 + 2^{-1} + 2^{-1}$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 1 & \frac{1}{2} & \frac{1}{2} \end{array}$$

4) $\frac{12(g^2h)^4}{(4g^5h^0)^3}$

- ① simplify top
→ power to power
- ② simplify bottom
→ power to power
- ③ Divide

5) $\frac{5(g^1h^4)^6}{(10gh^2)^2}$

* same as #4

6) $\frac{4n^3 \cdot m^{-3}}{3mn^{-2}}$

- ① separate terms
- ② simplify

$$\begin{array}{l} 3mn^{-2} \\ \textcircled{1} \frac{4 \cdot n^3 \cdot m^{-3}}{3 \cdot n^{-2} \cdot m} \\ \textcircled{2} \frac{4n^5m^{-4}}{3} \\ \textcircled{3} \frac{4n^5}{3m^4} \end{array}$$

7) Error Analysis. Describe and correct the mistake made in simplifying the expression below:

$$\begin{array}{l} 2b^4 \cdot (2b^4)^4 \\ 2b^4 \cdot 2b^{16} \\ 4b^{20} \end{array}$$

PUSH IT TO THE LIMIT.

Mixed Review	
<p>8) Line l and line p are parallel. Given that the equation for line p is $4x+3y=2$ and line l passes through the point $(-6,0)$, what is the equation for line l ?</p> <p>(parallel = same slope)</p> <ol style="list-style-type: none"> ① rearrange for $y = mx + b$ ② find m ③ re-write, using $x = -6, y = 0$ and $m = \text{---}$ ④ find 'b' ⑤ re-write with $y = \underline{m}x + \underline{b}$ 	<p>9) What is the equation for the line perpendicular to $3x=-6y+9$ and through the point $(3, 5)$?</p> <p>(perpendicular = opposite, inverse slope) *follow steps from # 8</p>
<p>10) Point m is the midpoint to line segment BC. Point C has the coordinates $(3,4)$ and point m has the coordinate $(-6,5)$, what are the coordinates for point B?</p> <p>Label: $B \text{---} m \text{---} C$</p> <p>$\frac{x_2 - x_1}{2}, \frac{y_2 - y_1}{2} = \text{midpoint}$</p>	<p>11) On a number line, point A is at -2 and point B is at 6. What is the coordinate of the midpoint, m?</p> <p>* same as #10</p>
<p>12) What is the slope of the line that passes through the points $(-3, 2)$ and $(4,6)$ in the standard coordinate plane?</p> <p>slope = $m = \frac{y_2 - y_1}{x_2 - x_1}$</p>	<p>13) Write the equation of the line that passes through the points $(-5,2)$ and $(0,-2)$?</p> <ol style="list-style-type: none"> ① find slope ② plug slope, x, and y into: $y = mx + b$ ③ find 'b' ④ plug 'm' and 'b' into $y = mx + b$

PUSH IT TO THE LIMIT.